

Balancing equations, Reaction types/rates, endothermic and exothermic reactions REVIEW

Balance the follow and state the type of reaction:

- 1) $\text{Na}_3\text{PO}_4 + 3 \text{KOH} \rightarrow 3 \text{NaOH} + \text{K}_3\text{PO}_4$ Reaction Type D.R.
- 2) $\text{MgF}_2 + \text{Li}_2\text{CO}_3 \rightarrow \text{MgCO}_3 + 2 \text{LiF}$ Reaction Type D.R.
- 3) $\text{P}_4 + 3 \text{O}_2 \rightarrow 2 \text{P}_2\text{O}_3$ Reaction Type SYNTHESIS
- 4) $2 \text{RbNO}_3 + \text{BeF}_2 \rightarrow \text{Be}(\text{NO}_3)_2 + 2 \text{RbF}$ Reaction Type D.R.
- 5) $2 \text{AgNO}_3 + \text{Cu} \rightarrow \text{Cu}(\text{NO}_3)_2 + 2 \text{Ag}$ Reaction Type S.R.
- 6) $\text{CF}_4 + 2 \text{Br}_2 \rightarrow \text{CBr}_4 + 2 \text{F}_2$ Reaction Type S.R.
- 7) $2 \text{HCN} + \text{CuSO}_4 \rightarrow \text{H}_2\text{SO}_4 + \text{Cu}(\text{CN})_2$ Reaction Type D.R.
- 8) $\text{GaF}_3 + 3 \text{Cs} \rightarrow 3 \text{CsF} + \text{Ga}$ Reaction Type S.R.
- 9) BALANCED $\text{BaS} + \text{PtF}_2 \rightarrow \text{BaF}_2 + \text{PtS}$ Reaction Type D.R.
- 10) $\text{N}_2 + 3 \text{H}_2 \rightarrow 2 \text{NH}_3$ Reaction Type SYNTHESIS
- 11) $2 \text{NaF} + \text{Br}_2 \rightarrow 2 \text{NaBr} + \text{F}_2$ Reaction Type S.R.
- 12) $\text{Pb}(\text{OH})_2 + 2 \text{HCl} \rightarrow 2 \text{H}_2\text{O} + \text{PbCl}_2$ Reaction Type D.R.
- 13) $2 \text{AlBr}_3 + 3 \text{K}_2\text{SO}_4 \rightarrow 6 \text{KBr} + \text{Al}_2(\text{SO}_4)_3$ Reaction Type D.R.
- 14) $\text{CH}_4 + 2 \text{O}_2 \rightarrow \text{CO}_2 + 2 \text{H}_2\text{O}$ Reaction Type COMBUSTION \leftarrow DO NOT DO!
- 15) $2 \text{Na}_3\text{PO}_4 + 3 \text{CaCl}_2 \rightarrow 6 \text{NaCl} + \text{Ca}_3(\text{PO}_4)_2$ Reaction Type D.R.
- 16) $2 \text{K} + \text{Cl}_2 \rightarrow 2 \text{KCl}$ Reaction Type SYNTHESIS
- 17) $2 \text{Al} + 6 \text{HCl} \rightarrow 3 \text{H}_2 + 2 \text{AlCl}_3$ Reaction Type S.R.
- 18) $\text{N}_2 + 3 \text{F}_2 \rightarrow 2 \text{NF}_3$ Reaction Type SYNTHESIS
- 19) $\text{SO}_2 + 2 \text{Li}_2\text{Se} \rightarrow \text{SSe}_2 + 2 \text{Li}_2\text{O}$ Reaction Type D.R.
- 20) $2 \text{NH}_3 + \text{H}_2\text{SO}_4 \rightarrow (\text{NH}_4)_2\text{SO}_4$ Reaction Type SYNTHESIS

21) Name 4 things that affect the rate of reaction & give an example of where/how we saw this in class:

1. CATALYST
2. SURFACE AREA
3. CONCENTRATION
4. TEMPERATURE

22) What direction would heat be moving in the following types of reaction (into the reaction or into the surroundings)

Endothermic: HEAT MOVES FROM THE SURROUNDINGS TO THE SYSTEM

Exothermic: HEAT MOVES FROM THE SYSTEM TO THE SURROUNDINGS

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23) What is needed for a successful collision?

ENOUGH ENERGY - MINIMUM AMOUNT IS CALLED ACTIVATION ENERGY

24) What does the law of conservation of energy state?

ENERGY CANNOT BE CREATED OR DESTROYED

25) Energy a body has because it is in motion is defined as KINETIC energy

26) Energy is released when bonds break

27) Energy is Absorbed when bonds form

28) When the energy released from the formation of bonds is greater than the energy required to break bonds the reaction is considered:

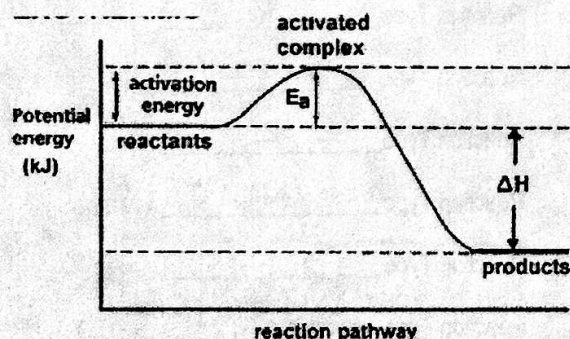
EXOTHERMIC

29) When the energy released from the formation of bonds is less than the energy required to break bonds the reaction is considered:

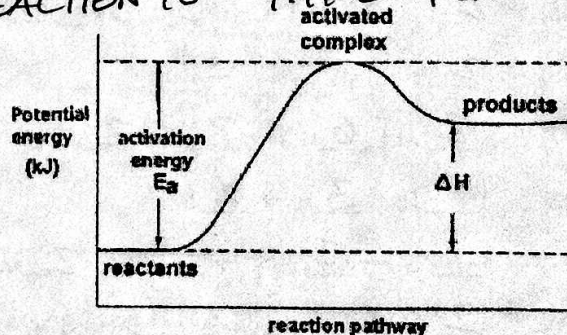
ENDOTHERMIC

30) What is activation energy and what can lower it??

THE MINIMUM AMOUNT OF ENERGY REQUIRED FOR A REACTION TO TAKE PLACE



EXOTHERMIC



ENDOTHERMIC

31) Label the above diagrams as either endothermic or exothermic

32) Give an example of each type of reaction/PROCESS

Endothermic → ALKA Seltzer AND WATER / TOUCHING A GLASS OF ICE WATER
Exothermic → $\text{CaCl}_2 + \text{H}_2\text{O}$ / TOUCHING A WARM CUP OF COFFEE